In the Specification

Please amend the specification as follows:

Please amend paragraph [0040] as follows:

[0040] This formula gives the transmission T of the device provided with a metallic guide, and is as follows:

$$[[\, T = e^{-rs} z\, p \frac{a \sin^2 \alpha}{4A} \,]] \qquad \underline{T = e^{-\rho\sigma z}\, \frac{\pi a \sin^2 \alpha}{4A}}$$

In this formula:

- A is the metallic guide section (in m^2),
- a is the section (in m^2) of the optical fibre that is coupled to the scatterer and in which the laser beam is to be centred,
- α is the numerical aperture angle of the fibre,
- z is the guide length (in m),
- ρ is the density of particles that scatter light (number per m^3), and
- σ is the scattering cross section (in m^2).

Please amend paragraph [0067] as follows:

[0067] In the case of a straight propagation, the variation dL of luminance L (in $W/m^2/sr$) when crossing a thickness dz of an elementary volume is such that:

$$[[\, \frac{dL}{dz} = -(a+b)L \,]] \qquad \underline{\frac{dL}{dz} = -(\alpha + \beta)L}$$

where α is the absorption coefficient (in m^{-1}) and β the scattering coefficient (in m^{-1}).

Please amend paragraph [0072] as follows:

[0072] The total luminance I in the direction $\vec{s}$ at point r is dissociated into two terms corresponding to the reduced incident luminance I_{ri} and the scattered luminance I_d. The following two equations are obtained:

$$[[\frac{dI_{ri}}{ds}(r, \vec{s}) = -\rho\sigma t Iri(r, \vec{s})]] \quad \underline{\frac{dI_{ri}}{ds}(r, \vec{s}) = -\rho\sigma_t I_{ri}(r, \vec{s})}$$

$$\frac{\rho\sigma_t}{4\pi}\int_{4\pi}\rho(\vec{s},\vec{s}')I_{ri}(r,\vec{s}')d\omega' \; \frac{dI_d}{ds}(r,\vec{s}) = -\rho\sigma_t Id(r,\vec{s}) = \frac{\rho\sigma_t}{4\pi}\int_{4\pi}\rho(\vec{s},\vec{s}')I_d(r,\vec{s}')d\omega' + \varepsilon(r,\vec{s}) + \varepsilon_{ri}(r,\vec{s})$$

where $[[\varepsilon ri(r, \vec{s}) = \frac{\rho\sigma_t}{4\pi}\int_{4\pi}\rho(\vec{s},\vec{s}')I_{ri}(r,\vec{s}')d\omega']] \quad \underline{\varepsilon_{ri}(r, \vec{s}) = \frac{\rho\sigma_t}{4\pi}\int_{4\pi}\rho(s,s')I_{ri}(r,s')d\omega'}$

Please amend paragraph [0075] as follows:

[0075] In these equations,

$$[[h = 2\rho\sigma tr/3 \text{ and } Kd = 3\rho\sigma tr\rho\sigma a]] \quad \underline{h = 2\rho\sigma_{tr}/3 \text{ and } K_d = 3\rho\sigma_{tr}\rho\sigma_a}$$

where $\sigma_{tr} = \sigma_a + \sigma_s(1-\mu)$ and μ is the cosine of the average scattering angle.

Please replace paragraph [0076] with the following amended paragraph:

The scattered illumination at a point r is then expressed as follows:

$$Ud(r) = \int_V G(r,r')Q(r')dV' + \int_S \frac{G(r,r')Q_1(r')}{2\pi h}dS'$$

where $Q(\vec{r}) = Q(r,\theta,z) =$

$$[[3\rho\sigma tr \frac{P_0}{\pi w^2} \exp(-\rho\sigma tz) \exp\left(\frac{-2r^2}{w^2}\right),]] \underline{3\rho\sigma_{tr} \frac{P_0}{\pi w^2} \exp(-\rho\sigma_t z) \exp\left(\frac{-2r^2}{w^2}\right)}, \text{ where}$$

$Q_1(\vec{r})$ is zero for isotropic scattering, dV is the volume of the sample, P_o is the incident power of the laser beam and W is the radius at $1/e^2$ of the laser beam.

Please replace paragraph [0083] with the following amended paragraph:

[[0083]] The order of magnitude of this value can be found by simple considerations. The reduced incident illumination decreases in the following form:

$$[[U_{ri}(z) = K1x \frac{\exp(-_{rs} t^z)}{_q 2_z 2}]] \quad \underline{U_{ri}(z) = K1x \frac{\exp(-\rho\sigma_t z)}{\theta^2 z^2}}$$

where K1 is a proportionality constant and θ is the aperture angle at $1/e^2$ of the laser beam in the material, while we can write the following for the scattered illumination, due to the conservation of energy, and assuming that this illumination is constant over a sphere of radius z :

$$[[4\pi z^2 Ud(z) = K2x(1-\exp(-\rho\sigma tz))]] \quad \underline{4\pi z^2 U_d(z) = K2x(1-\exp(-\rho\sigma_t z))}$$

where K2 is a proportionality constant.